Paper/Work

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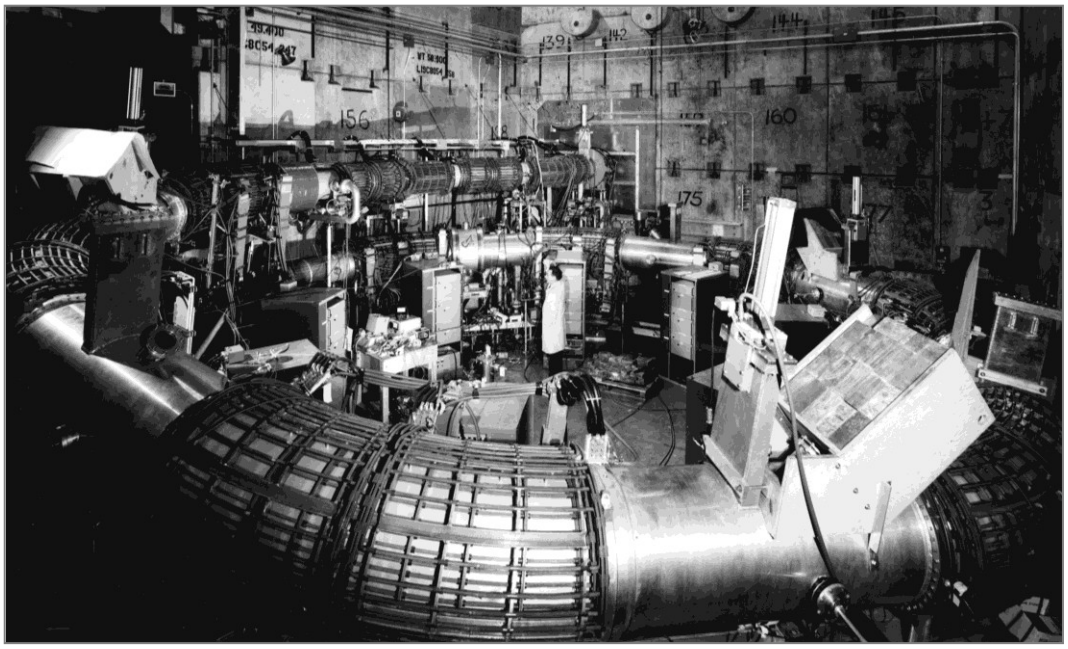
LAWRENCE LIVERMORE POSTDOC ASSOCIATION

A VISIT TO THE LLNL ARCHIVES



A Labyrinth within the Labyrinth

By Charles Reid

Deep within The Labyrinth - or The Lab, for short - near the dark woods of CASC and the Enchanted Lake of Hausmann (beneath which live two great dragons, one blue and one white, each cautiously and perpetually circling around the other, generating enough energy to power the Labyrinth), in close proximity to the perimeter of the Forbidden Realm of Old and Powerful Magic - or The Fence, for short - beyond which Wizards vie to control forces beyond human comprehension, twixt dusty, rusted corrugated iron magnetic flux reactors, abandoned laser mainframes, mothballed plasmonic flux capacitors, and in the shadow of the Superblock, the ominous nuclear complex that is home to perpetual chemical suns harnessed by the Wizards, there lies a angry, squat, gray building: The Archives.

The previous day, I had sent an electronic messenger pigeon across the Labyrinth to inform The Archive that it would be receiving a Muggle (or, non-Wizard) visitor. Preparations had to be made: documents shuffled and stuffed into locked drawers, boxes sealed shut, locks secured, portals deactivated. It was a rare occasion for a Muggle to visit The Archives.

The Forbidden Realm is not, strictly speaking, forbidden - Magical Councils of Wizards are able to bestow on Muggles the capability to enter the Forbidden Realm without being torn asunder by the powerful forces contained therein. It just requires the right paperwork. In fact, The Archives lies on the outer rim of the Forbidden Realm, a veritable cave of wonders sealed off from the rest of the Forbidden Zone. As I rode up to The Archives on my bright yellow horse, passing through the shadow of the Superblock, my horse became uneasy, restless, and began to screech. I dismounted, and left it some distance outside of The Archives. I had a sneaking suspicion that, when I returned from The Archives, my horse would be gone, having fled away, frightened, from that place of dark magic.

I approached the large door to The Archives, covered in colorful warnings, caveats, and bright symbols, looking like a warnings label design firm met Sesame Street and the letter of the day was Q. Nervously, I rang the bell to solicit admittance. I heard shuffling. A massive door creaked open slowly. I strained to see beyond the door, from which a soft, diffuse light escaped.

A benevolent-looking female Wizard of the

A VISIT TO THE LLNL ARCHIVES, CONTINUED

Wizards at work

Forbidden Zone poked her head out. The Archivist. "You're Charles!" she said, without hint of uncertainty. "No magical devices - leave all implements capable of magic out here, in the locker." I took a phone out of my pocket and put it into a cage with a hastily scrawled sign saying "Faraday Cage" taped onto it with a strip of yellowed, ancient tape that looked like dinosaur skin, and followed her inside. "It doesn't lock. The locker, I mean. But no need to worry, no one will steal your magical implements, nothing's ever stolen - unless, of course, you're lucky." She cackled to herself, and the enormous door swung shut with a deep clang that had a ring of finality to it.

Before I could look around, she pointed at a leather register containing the names of past visitors. "Sign in to the register here," she said, and as I did so, she sized me up. "Don't get many Muggles in here. They weren't even allowed in at all, until recently. They'll only allow you in under condition that I keep my eye on you," she said, eyeing me. "Is this research part of your job? What do you do?" I told her I was an engineer – "Oh," she said, "one of *those*," with a knowing look - and that I was just interested in poking around and learning how to use The Archives. She nodded approvingly. "We have lots of information here. I'm sure you'll find what you need."

I finished writing in the register, looked up, and saw a long row of storage shelves, ends capped with cranks tipped with black knobs, which, when turned, would move shelves sideways along rails, squishing and compressing shelves together. Useful, but dangerous: say you were pulling a box out from the back of a shelf, deep in the aisle, and someone decided they'd had enough of you, and twisted the knobs until you were

squished like a grape being turned into wine.

I smiled nervously, knees weak, trying to be extra-nice, pushing the image to the back of my mind.

Organic colors dominated The Archive: tan boxes filled shelves, olive drawers containing maps and oversized documents, ashen gray shelves, brown wooden panels with hundreds of small drawers, slate colored boxes filled with photographs, diffuse yellow lights. But contrasting these organic colors were sterile mechanical colors, black plastic cases with anonymous white labels, metal film reels with pasted white squares and scribbled names in permanent black ink, black leather bound volumes with gold lettering on the sides filling low shelves.

The Archivist began by putting a pile of photographs in front of me - the photographs I had requested using the electronic messenger pigeon – and asked me to pick out which photographs I wanted scanned. Then we moved on to a movie I had requested. "It needs approval," she said, "from the Wizards Upstairs Who Approve Such Things As Need Approval For Muggles To See. But I'll describe it." She described it. "Do you still need it?" Yes, I said, I do still need it.

We then proceeded to discuss some documents whose nature had remained a mystery, even after reading their titles. I asked her about a logbook. She walked me down the aisle full of shelves with cranks, cranked the knob for a shelf, and picked out a shelf.

A VISIT TO THE LLNL ARCHIVES, CONTINUED

"The logbooks are in... let's see... this one." She pulled out a box with cryptic black lettering on the outside, marked "1982-1990." It was neatly filled with notebooks, neatly stacked sideways, filled with engineering paper, engineering paper neatly filled with notes, legible scribbles detailing what had been done and what remained to be done for that day, black and white photographs of oscilloscope readings yellowing with age pasted onto page after page, equations detailing what these oscilloscope readings meant, histogram plots, calibration curves, to-do lists, invoices, receipts – in short, a meticulous record of the minutiae of daily life of a project engineer operating this reactor or that accelerator.

In the back of The Archive, behind the rows of moving metal shelves on rails chock full of boxes, were still more wooden shelves chock full of movie film canisters, and next to those wooden shelves were dusty, retro film players, covered with black and red and white knobs and dials and slots and mounts, waiting eagerly to be used, looking like they had been waiting for decades.

We then moved on to old Newsline newspapers - what you might call, Analog Newslines. We dug through April 1980, August 1981, and September 1985 Analog Newslines to find relevant articles. We dug through old Science and Technology Review magazines to find other articles. Shelf after shelf of old newspapers and old magazines, annual reports and draft reports, logs and notebooks - a whole history there in those shelves.

With modern technologies, we have the capability to record details down to the microtwitches and keystrokes of every millisecond of every hour of every day. We can obtain information dumps more massive than we have space to put them – all the information we could ever want. We have the ability to inscribe increasingly fractal details of our present history into increasingly minuscule devices the size of grains of sand, the size of specks of dust, until our entire history is laid out before us like a dust bunny in some remote corner of the universe (until reality sneezes, and we're left to pick up the pieces). There will, perhaps, never be a box in a shelf labeled "2012," filled with notebooks. Maybe it will be filled with digital sand, and we'll lose the ability to read what is in it, a box full of tomorrow's 5 ¼-inch floppy drives. It is a sobering thought.

Keep the receipt

Looking cooler than 5 ¼-inch floppy drives

"Wanna see something cool?" She slid open one of the hundreds of small drawers on the wooden panel, revealing a slew of photographic negatives lined up like soldiers drilling on a parade ground, waiting to be reviewed by a judge. "All photographic negatives. All from different historical periods." More drawers, more photographic negatives. Where would one even begin?

I had asked many questions, and had gotten many answers. But my time visiting The Archives was drawing to a close. As she escorted me to the door, she pointed at a desk containing still more historical items. "E. O. Lawrence's desk," she said. "Edward Teller's desk," she said, pointing at another. "And Edward Teller's chair." She showed me historical photographs from the Lab's history, photographs from atmospheric nuclear tests on Pacific islands, photographs of old accelerators and lasers, photographs of past directors

A VISIT TO THE LLNL ARCHIVES, CONTINUED

and big groups of physicists and Edward Teller being knighted with a yardstick or pointy implement of some sort in a small ceremony of about 20 cohorts who each signed the photograph for posterity, keenly aware that some 50 or 60 years down the road some young Lab employee would look at the photograph and wonder who on earth all these strange characters were.

I thanked The Archivist, and told her I would be back again. "Tell your friends!" she said, then loaded me up with souvenir bookmarks and souvenir postcards and informational handouts like I was a European tourist in a Las Vegas gift shop.

As the door to The Archive shut behind me, I opened the magical locker and discovered that I was not so lucky after all: my magical implements were still there.

And my bright yellow horse was there where I left it, patiently waiting for me.

Why use The Archives?

In the words of The Archive: "To see the past more clearly." The Archives can help provide supplementary information about earlier research, provide historical context for research projects, help researchers find out what's already been done, and inform researchers' decision-making processes.

How do I find out what's in The Archives?

You can visit The Archive's online catalog by typing "Archives" in the address bar of your browser, or by visiting https://archives-int.llnl.gov/

From there, you can search the Catalog, which contains metadata about general materials and some photographs, or you can search the News Index, which has metadata for Lab publications like Newsline or administrative memos.

Don Quixote, redux.

A VISIT TO THE LLNL ARCHIVES, CONTINUED

Here's a flavor for some of the many unique resources The Archives offers:

- Directors' correspondence and files
- Research notebooks
- Old Newsline newspapers and Science & Technology Review back issues
- Historical LLNL telephone directories, site maps, and aerial photographs
- Photographs, films, and videos
- Oral histories and biographies

I found something useful/cool/interesting/ helpful/amazing using the online catalog. Now what?

Send Maxine Trost, The Archivist, an email (llnl-archives@llnl.gov) letting her know what you found, and request the item. You can arrange an in-person visit, or ask her to mail or email photocopies of documents.

Maxine is also on LabBook! She has started an Archives group on LabBook, where she posts information about upcoming film screenings and other events related to The Archives.

I'm too ~~lazy~~ busy to ride a bright yellow horse to The Archives. Can't I continue to stay sitting in front of my computer in my office, and find some way of using The Archives with only minimal twitching motions?

As a matter of fact, you can! There are many documents and photographs available electronically.

You can narrow your search criteria down to items contained in the catalog that are electronic by following this procedure:

1. Go to the Archives website
2. Perform a precision search by clicking "Precision Search" at the top
3. Pick your material type by picking "Material Type" in the drop-down box (and set it to "Photographs" or whatever material type you're interested in)
4. Click the plus sign to add an additional search criteria
5. Set the level of description by picking "Level of Description" in the drop-down box (and set it to "Item," which means the item is (usually) available electronically)

Optionally, narrow down the photographs that will result by adding a search keyword.

I'll be back – I need to use the Archives.

NEXT STEPS: INTERVIEWS WITH FORMER POSTDOCS

Interview conducted by David Alessi.

When was the end of your postdoc?
Tammy Ma: My postdoc ended in June 2012.

Where do you work now and how is that similar or different from what you did as a postdoc?
I continue to work at the Lab, in the same group, in the same office. The transition for me was practically seamless, as I've been pretty involved in NIC (the National Ignition Campaign) for a while now, so I'm simply carrying on what I was doing before. As a postdoc, some of my duties included serving as PI on several Omega and Titan experiments (Omega is a 60-beam, 40 kJ laser facility at the Laboratory of Laser Energetics in Rochester, NY; Titan is a short-pulse petawatt laser at the Jupiter Laser Facility here at the Lab), writing and submitting proposals for beam time at various laser facilities, running NIF shots, and running and analyzing data from a NIF x-ray imaging diagnostic. If anything, I feel like I have less work now than when I was a postdoc (hopefully my boss doesn't read this!), but I think it's mostly just that I've figured out how to juggle things better.

Did you apply elsewhere? Why did you make this particular choice (Lab vs. academia vs. industry)?
No, at this point I didn't apply anywhere else. It's a really exciting time to be at NIF and working on the NIC, so I certainly want to see that through. Besides, there are so many different aspects to the Lab and this project alone, that if I ever got bored or tired of what I was doing, it wouldn't be terribly difficult to switch over to something new.

What did you enjoy the most and the least about being a postdoc at LLNL? What do you think are the differences between a postdoc at the Lab versus at a university?
By far, what has most enriched my experience at LLNL has been the interaction with my colleagues and the people at LLNL. Not only are these people smart, curious, and incredibly capable, but they're genuinely nice and fun to work with. I've also been lucky to have great mentoring and advising throughout my time here. What did I like least? The times when I felt totally overwhelmed and dumb (happens a lot, it turns out). I guess one of the things I certainly appreciate about being at the Lab versus a university is the chance to be part of huge projects and being able to learn from a ton of

people, whereas at a university, it's probably much more difficult to participate as intimately on projects of such large magnitude.

How far along your postdoc were you when you decided what the next step in your career would be?
I did my graduate work at the Lab so I've been here for a while and have always really liked it. I figured I wanted to stay as long as they would hire me!

How did you get your new job?
Two of my bosses walked in my office a few months ago and told me I should interview soon for conversion. I said okay.

Any piece of advice for postdocs at LLNL?
Go to conferences, publish, do your job well, and always deliver. Don't be afraid to step up and volunteer for a job, but know your limitations and ask for help when you need it. A willingness to work hard gets rewarded.

CAREER RESOURCES

UPCOMING EVENTS

2-day IPPB Brown Bag session
"Developing a Winning Proposal"
September 20th and 26th, 12:00-1:15 PM
T1879, Room D

This class, presented in **two one-hour sessions**, gives participants clear guidance for the three stages of developing a winning proposal: idea development, proposal development, and follow-up. Participants learn how to develop an idea into a funded project, using proven principles adapted from industry and government best practices.

FROM LAB TO WALL STREET

With the number of physicists earning PhDs reaching an all time high in 2010, it is becoming clear that more individuals will be seeking jobs outside of traditional academic positions. One of the fields which has recently attracted more of these candidates is the finance industry.

In *Physicists Learn a Trade*, Michael Price discusses how math-savvy physicists are applying their skills to investment theory. The University of Houston is even pioneering a new doctoral program in econophysics, which prepares students for careers in the "quant" departments of large financial firms through training in probabilistic and statistical models.

Not everyone is excited, however, about this new direction. Vivek Wadhwa, of Singularity University, argues, "why should we be using our national resources and making it a priority to churn out more investment bankers?" In his aptly titled post, "Friends don't let friends get into finance," Wadhwa asserts that we should be focusing our efforts on giving physicists more entrepreneurial training.

With strong feelings from both proponents and critics, we may have to wait to see if similar programs emerge at other universities, and whether top-tier physics programs start churning out future Gordon Gekko's.

INTERVIEW LIKE A PRO

In his column, Tooling Up, David Jensen describes how intangible qualities are often the most important aspect of a job interview. While most of us know to avoid texting, chewing gum, and bringing along family pets to interviews, below are a few other tips on important intangibles.

First impressions are key. Several factors influence first impressions: vocal quality, body posture, eye contact, and facial expressions. Your attitude should project self-confidence, professionalism, and passion. And don't forget to practice that handshake!

Chemistry. Your potential colleagues will be thinking about how likely you are to get along with and be compatible with current employees. "Company managers view people who get along well with the team…as having a greater potential for advancement."

Enthusiasm! Academic scientists tend to be more reserved than our counterparts in the business world, in part due to the impartial review that must be given to scientific results. Employers, however, will want to see the "passion that got you into science in the first place…This isn't about salesmanship; it's about emotional engagement with your work. Just make sure your prospective employer senses your enthusiasm."

Credit: Cathy Thorne

JOB LINKS

Science – Featured jobs:
http://scjobs.sciencemag.org/featured-jobs/
Nature – Jobs of the week:
http://www.nature.com/naturejobs/science/
Official LLNL jobs site: careers.llnl.gov
Postdoc listings: www.postdocjobs.com
Academic jobs: www.academickeys.com
APS Careers in Physics: www.aps.org/careers
Government jobs: www.usajobs.gov/
Industry jobs: www.indeed.com
http://jobs.newscientist.com/
sfbay.craigslist.org/sci/
www.linkedin.com/jobs

NOTES FROM THE LLPA COUNCIL MEETING ON SEPTEMBER 5

Start: 9/ 5/ 2012, 12pm, B123 Conf. Room A
Participants: Nathan Kugland, David Alessi, David Martinez, Kris Kulp, Kirsten Howley, Abhinav Bhatele, Andre Schleife, Charles Reid, Lance Simms, Nick Be, Liam Stanton, Heather Whitley

Introduction:
* Nathan emphasizes importance of outreach, encourages everyone to recruit more postdocs for the council

Social Events:
* $240 left to spend for future events
* Happy Hour and lunches will pick up again (host: Andre)
* upcoming: Corn maze (host: David Alessi); haunted vs. family?; someone take pictures!
* Brighter Holidays 2012: collect money, sell things (beer mug, ornaments, ...)?
* postdoc potluck?
* holiday party 2012? (Lance will call Oak Door for the ultimate Karaoke experience; Heather tentatively offered her place)

Newsletter:
* everyone really liked the Ed Moses interview
* voice recorder is on its way (Christine)
* future feature articles: Charles (found fun pics in some archives, agreed on article/ photo essay on the archives, potentially future articles on old building related to LLNL/ Site 300), Kirsten (tentatively agreed to prepare an article about the "LLNL weaponeers")
* everyone please email suggestions for exit interviews to David Alessi

Lab-wide LDRD discussion:
* Kirsten talked to Paul Miller and he showed interest in this issue (Kris will follow up)
* status of the LDRD brown bag (Kris will follow up with Eric)

Moderation of the Postdoc Email List:
* moderation is possible; plan: everyone can initiate a discussion which is then moved to labbook
* send out info email/ posting to postdocs to instruct them regarding the
new procedure and regarding the use of labbook

Web Team:
* template should be available "this week"
* we should have an internal part of the website
* put the first newsletters online (Abhinav)

Career Dev:
* PG&E brown bag? (Nick will follow up with Amy)
* Stanford visit: find out who/ how many postdocs are interested and what topics they want to cover/ have covered (email by Andre)

Tea Time and Lightning talks:
* TTINCB (tea time is now coffee break)
* first coffee break will be organized by Charles after the next round of lightning talks, potentially in B123.

POSTDOC AND FORMER POSTDOC NAMED AS FELLOWS

Carolyn Hall (L), a microbiologist and analyst with the Biodefense Knowledge Center, has been selected as a 2012-13 Fellow of the Emerging Leaders in Biosecurity Initiative. Dina Weilhammer (R), an immunologist, has been named a 2012-13 American Association of Immunologists (AAI) Public Policy Fellow.

Read more: https:/ / pao-int.llnl.gov/ news/ peoplegrouphighlights/ 2012/ Aug/ ATL-082112_fellows.html

SELECTED RECENT POSTDOC RESEARCH PUBLICATIONS

Bold = LLNL Postdoc. *Broadcast your achievements! Make new connections & help show how we are doing collectively.*

Guidelines: 1) Peer-reviewed and accepted publications (journal or conference proceedings) only; 2) Your affiliation must be LLNL; 3) Prepare a standard-format citation with all authors (no *et al*), the full title, journal/proceedings info, and a link to the online abstract; 4) Note which authors are LLNL postdocs, and in what division & group; 5) Send all of this to Nathan (kugland1@llnl.gov).

PLS/AEED, Program for Climate Model Diagnosis and Intercomparison: **Kate Marvel**, Ben Kravitz, and Ken Caldeira, "Geophysical Limits to Global Wind Power," Nature Climate Change. Advance online publication 9/9/12. http://dx.doi.org/10.1038/nclimate1683.

PLS/CMMD: **S. Charnvanichborikarn**, **S.J. Shin**, M.A. Worsley, and S.O. Kucheyev, "Tailoring properties of carbon-nanotube-based foams by ion bombardment," Appl. Phys. Lett. 101, 103114 (2012). http://link.aip.org/link/doi/10.1063/1.4751268

PLS/CMMD/Quantum Simulations Group: Sebastian Küfner, **André Schleife**, Benjamin Höffling, and Friedhelm Bechstedt, "Energetics and approximate quasiparticle electronic structure of low-index surfaces of SnO2," Physical Review B 86, 075320 (2012) http://link.aps.org/doi/10.1103/PhysRevB.86.075320

PLS/Physics/HEDLP/Fast Ignition Group: **F. Pérez**, J.J. Kay, J.R. Patterson, J. Kane, B. Villette, F. Girard, C. Reverdin, M. May, J. Emig, C. Sorce, J. Colvin, S. Gammon, J. Jaquez, J.H. Satcher, and K.B. Fournier, Efficient laser-induced 6-8 keV x-ray production from iron oxide aerogel and foil-lined cavity targets, Physics of Plasmas 19, 083101 (2012). http://pop.aip.org/resource/1/phpaen/v19/i8/p083101_s1

WCI/AX Division: Lee JR, **Whitley HD** (postdoc at the time the work was done), Meulenberg RW, Wolcott A, Zhang JZ, Prendergast D, Lovingood DD, Strouse GF, Ogitsu T, Schwegler E, Terminello LJ, van Buuren T., "Ligand-mediated modification of the electronic structure of CdSe quantum dots," Nano Lett., **2012**, 12 (6), pp 2763–2767, http://pubs.acs.org/doi/abs/10.1021/nl300886h

COMMENTS/SUGGESTIONS/PRAISE/COMPLAINTS?

Please send your feedback to the Editor (Nathan Kugland, kugland1@llnl.gov).

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